NATIONAL ENERGY TECHNOLOGY LABORATORY

World CO_2 Emissions - Projected Trends *Documentation*

November 20, 2009

U.S. DEPARTMENT OF ENERGY

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Introduction to the Tool

The *World CO_2 Emissions - Projected Trends* interactive tool enables the user to look at both total and power sector CO_2 emissions from the use of coal, oil, or natural gas, over the period 1990 to 2030. One can use the tool to compare five of the larger CO_2 emitters to each other or to overall world emissions. The data are from the IEA's World Energy Outlook 2009 Reference Scenario. IEA uses a scenario approach that examines future energy trends for their projections. The projections are derived from the World Energy Model (WEM), a large-scale mathematical model. The Reference Scenario generates the core projections that baseline what would happen if there were no new energy-policy interventions by governments beyond those already adopted by mid-2009. One can use the baseline data to test alternative assumptions about future government policies.[1]

Using the Tool

Selecting a Country or Region
Select a country or region in the *Source* box and click on the *Add* button to move the section to the *Destination* box. An alternative to using the *Add* button is to double click on the selection. The selections in the *Destination* box can be reordered by dragging them up or down. The order of the selections in the *Destination* box is the order in which they will be graphed. Press the *Update* button to graph the selections in the *Destination* box. To remove a selection from the *Destination* box, select the entry and click on the *Remove* button (or just double click on the selection). Then click on the update button to re-graph. Note that you must click on the *Update* button anytime you make changes to the *Destination* box in order for you graph to update.

Coal, Oil, Gas, Total Toggle Buttons (CO_2 Source)
The three fossil fuel CO_2 sources that can be examined are coal, oil, or natural gas. The Total button is the sum of all three fossil fuel sources (Total = Coal+Oil+Gas). Select one of the four from the *Coal*, *Oil*, *Gas, Total* toggle button bar on the right. These buttons will instantly update the graph; there is no need to click on the *Update* button to view these selections.

Total and Power Toggle Buttons
The *Total* button shows the total CO_2 emitted from the selected CO_2 source. The Total is not the sum for all CO_2 sources, just the total of all sectors for the selected CO_2 source. For example, if the *Oil* and *Total* buttons were selected for the United States, the graph would show the total CO_2 emitted from oil for all sectors (power, transportation, Industry, and other sectors) in the United States. The *Power* toggle button is for power generation from the selected CO_2 source. Note that the graph title will tell you your selections for the CO_2 source and the type (Total or Power). For the above Total/Oil example, the graph title would read, "Total CO2 Emissions from Oil." The *Total* and *Power* buttons will instantly update the graph; there is no need to click on the *Update* button to view these selections.

Y-Axis Selections
The Y-axis for the graph can be fixed or can adjust automatically to maximize the visual graph heights. The fixed Y-axis is fixed to 40,500 million tonnes. This is the setting for the *Total World* CO_2 emissions from *Coal, Oil, and Gas*; the largest of all regions and CO_2 sources. The fixed Y-axis can be used to maintain the World CO_2 emission scale and used for comparison purposes.

Units
Mt = million tonnes. The CO_2 emissions are in millions of tonnes. A tonne (a metric ton) is equal to 1,000 kg or 2,204.6 pounds or 1.1 tons (short).

European Union
The European Union consists of the following 27 independent sovereign states:
Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom.

Data Source and Reference

[1] IEA (International Energy Agency) (2009), World Energy Outlook 2009, OECD/IEA, Paris.
http://www.worldenergyoutlook.org/